



Spark Gap

Vol. 36, Issue 7, July 2020 *MARC - Serving Central Indiana Communities for thirty-six years*

ON OUR M.A.R.C.:

As you heard on the Sunday night net, our monthly meeting will be held at the Club radio room in the garage area this month. We are going to attempt to also have access for on the air meeting at the same time over our repeater for those who can't attend or still being careful. The officers completely understand that we still have members that have family they are protecting and we want to be able to give all members a chance to be at the meeting in person or on the air. We will have a quick check in for those listening.

There are a few things you need to know about the meeting:

1. **Facemasks are REQUIRED** per the Johnson County Director of Emergency Management, who makes this space available for our Club to use. We also need to social distance.
2. Bring your own chair unless you prefer to stand for the whole meeting.
3. No coffee or food will be served, so you will have to bring your own.
4. VE testing will happen after the meeting, but **ONLY** for those who have **PRE-REGISTERED** via the Club website and **FACEMASKS WILL BE REQUIRED** for test candidates also.

Club radio room is located at 1 Caisson Drive, Franklin, IN. If you have never been there, talk in will be on our repeater.

The only event that we had for June was Field Day. Different than the last few years but sounds like we had a get turn out for the event. Hopefully, Bruce, K9ICP, has more information on this at the meeting.

A BIG thanks to Chris Fredrick, KQ9Y and Mike Rose, KC9WLR for getting the interference in our repeater fixed. Once we got access to Station 51, Mike did the tower work atop of the 140ft tower. The cause of the problem was the connectors between the dB Products 2M antenna and the 7/8" Helix feed line. Thanks guys, I really appreciate you!!!

Hope you will join us on the air or in person Saturday.

Jacki, K16QOG

President



Birthdays for the month of July:

W1VYN - Vyn Popplewell

KM6CRL - Bill Jackson

KC9JLS - Jim Siever

KD9FPO - John Dickerson



QSO Today Virtual Ham Expo

Participate in this ground breaking, virtual international amateur radio expo. Packed with world renowned speakers, exhibitors, and special conference rooms built on a virtual reality platform. Attend from the convenience of your desktop, laptop, tablet, or smartphone.

Coming to your laptop, tablet, and smartphone on:

August 8 and 9, 2020

You must register no later than July 24th if you want to attend. More information and registration:

Go to <https://www.qsotodayhamexpo.com/> to learn more!

Don't forget to get registered by July 24th!

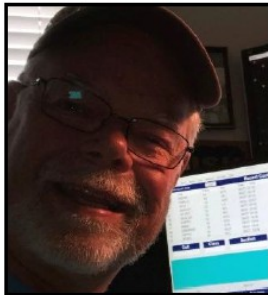
Quarantined Ops brings out the Best

By any count Field Day 2020 was a stellar success for Mid-State ARC members. Due to Covid-19 restrictions club members were forced to use their home station to make contacts during the 24-hour radio marathon.

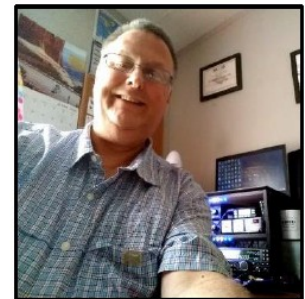
Early reports have the club logging the highest number of contacts in recent history. A casual poll during the Sunday June 28th ARES Net put our contacts totaling 707. Not every FD operator checked into the net and extra participants and logged contacts are beginning to emerge. Rudy KN9C later added 107 contacts and Tim WG9C added 34 contacts operating portable earning bonus points.



The top point getter was Bruce K9ICP with a reported 300 contacts. Jack W8ISH had 139 followed by Jim N9EJR with 70, Jim WU9Y with 52, Steve AF9SE with 48 and at least nine club members reporting a few or a couple of dozen contacts. Unofficially, we logged 848 contacts.



Two of the digital modes, FT8 and WinLink messaging provided lots of great contacts and extra bonus points. Mike KC9IKY racked up a few SSB contacts and provided a GOTA station for his kids to operate. It all added up to a great score and turnout for FD 2020. Thanks to everyone who operated and experienced ARRL Field Day 2020.



By w8ish, self-photos submitted by club members



Former member of M.A.R.C. Now a Silent Key



Hershel Saylor, WD9GMM became a Silent Key on June 25, 2020. He was a ham for many years and was active in the Mid-State Amateur Radio Club for most of his time in amateur radio. Hershel would work many club activities in Johnson and surrounding counties. He often worked at the 500 Mini Marathon on his bicycle taking pictures. Besides ham radio he was an avid photographer and loved taking pictures of family and community. Hershel was a very interesting person to talk to and had a varied background in many businesses and interests. He is survived by his wife Deborah Saylor and four children.

A pick from the past. How many of you had this for your first 2 Meter HT?

The Question we seem to get most often from our customers:

"WHEN IS ICOM COMING OUT WITH A HAND-HELD?"

ICOM IC-2A SYNTHESIZED 2 METER HAND-HELD

FEATURES YOU'VE WANTED

- 800 T/R Channels, Synthesized.
- 1.5 Watt Output High/Low Power Battery Saving Switch to .15 Watt.
- Separate built in Speaker & Mic. Excellent audio quality.
- Compact. About the size of a dollar bill.
- Variable size NiCd Power Pack, 3 sizes available to suit your needs. (250 MA standard). Makes the IC-2A the most compact synthesized HT on the market.
- ICOM level Receiver Performance-ICOM Quality Receiver in a compact package (.2uv./20db typical)
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- With slip on/slip off bottom NiCd Pack, you can vary the size of the HT from about 1 1/2 mm high to 1 7/8 mm high. Easy to carry extra Snap-on packs with you for extended trips.

Actual size: Cut out and put the ICOM IC-2A in the palm of your hand.

BACK VIEW
+600 khz offset
simplex/duplex
Hi/lo power

TOP VIEW
BNC antenna connector
"Rubber Duckie" standard
transmit indicator
squish
volume control
on/off
5 khz channel selection
10 khz channel selection
speaker/mic jack

ICOM
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THE ANSWER IS: NOW!

All 800 channels of it!

Researchers Use 200 Years of Sunspot Observations to Create "Sun Clock"

Researchers in the UK and the US have developed a new "sun clock" that quantifies extreme space weather and pinpoints distinct on/off times of high solar activity and space weather. The sun clock will assist in planning to protect space and ground-based infrastructure that is sensitive to space weather. The study, "Quantifying the solar cycle modulation of extreme space weather," was published in *Geophysical Research Letters*. It explains that the sun clock uses the daily sunspot number record available since 1818 to map solar activity over 18 solar cycles to a standardized 11-year cycle or "clock."

"Extreme space weather events can significantly impact systems such as satellites, communications systems, power distribution, and aviation," a Warwick University news release said, noting that these events are driven by solar activity. "By devising a new, regular 'sun clock', researchers have found that the switch on-and-off of periods of high solar activity is quite sharp."

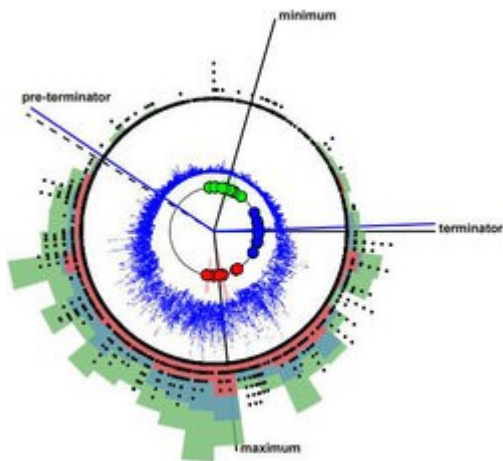
The researchers' analysis shows that while extreme events can happen at any time, they are much less likely to occur during quiet intervals. The sun clock is aimed at helping scientists to determine more precisely when the risk for solar storms is highest and to plan the impact of space weather on space infrastructure. This gains importance as Solar Cycle 25 is imminent.

According to the researchers, no two solar cycles are the same, but using a mathematical technique known as the Hilbert transform, they were able to standardize the solar cycle for the first time. The clock revealed sharp transitions between quiet and active periods of solar activity.

"Once the clock is constructed from sunspot observations, it can be used to order observations of solar activity and space weather," the university said. This includes the occurrence of solar flares and the 10.7-centimeter solar flux that tracks solar coronal activity.

The researchers determined that once past on/off times are obtained from the clock, the occurrence rate of extreme events when the sun is active or quiet can be calculated.

"Scientists spend their lives trying to read the book of nature," lead author and Professor Sandra Chapman of the University of Warwick's Centre for Fusion, Space, and Astrophysics, said. "Sometimes, we create a new way to transform the data, and what appeared to be messy and complicated is suddenly beautifully simple."



Multiple solar cycles are mapped onto a regular solar cycle clock with increasing time reading clockwise. Circles indicate the cycle maxima (red), minima (green), and terminators (blue). The 10.7-centimeter solar flux (blue) and GOES satellite X-, M-, and C-class solar flare occurrence is plotted. Extreme space weather events on Earth seen in the aa geomagnetic index are shown as black dots arranged in concentric circles.

..... ARRL Newsletter July 2020

↗ Light Emitting Diode (LED)

Typical LED Characteristics

| Color | Wavelength (nm) | Typical Forward Voltage (V) @ 20 mA |
|-------------|-----------------|-------------------------------------|
| Red | 630 - 660 | 1.8 |
| Orange | 605 - 620 | 2.0 |
| Yellow | 585 - 595 | 2.2 |
| Green | 550 - 570 | 3.5 |
| Blue | 430 - 505 | 3.6 |
| White | 450 | 4.0 |
| Ultraviolet | 850 - 940 | 1.2 |

Cathode (K)

Anode (A)

Schematic Symbol



MID-STATE AMATEUR RADIO CLUB

The Mid-State Amateur Radio Club meets the **THIRD SATURDAY** of each month at the Johnson County REMC 750 International Drive Franklin, IN 46131.

See our website, www.midstatehams.org, for maps on how to get to our meeting.

Everyone is welcome; you do not have to be a *HAM* to attend our meetings or a member of the club.

W9MID Repeater:

146.835/
146.235 MHz
(151.4 Hz PL Tone)

Club Officers:

President: Jacki Frederick – KI6QOG
Vice President: Bruce Tisdale – K9ICP
Secretary: Chris Read – W9OQ
Treasurer: Chris Mazzarella – KC9VGQ
Repeater Trustee - Chris Frederick – KQ9Y

W9MID Repeater:

443.525/
448.525 MHz
(151.4 Hz PL Tone)

Weekly Net: Sunday evening 7:00 PM ARES/RACES members and ALL RADIO AMATEURS
146.835/146.235 MHz (151.4 Hz PL Tone)

The Official Newsletter of the Mid-State Amateur Radio Club

P.O. Box 836
Franklin, Indiana
46131

Spark Gap Editor: Robert LaGrange N9SIU

Please send your articles to my email: n9siu@yahoo.com no later than the 2nd week of the month.



Special thanks to Johnson County REMC for the use of their community room for meetings and testing.